

Atty Dkt. No.: 10021235-1
USSN: 10/670,551

REMARKS

In view of the following remarks, the Examiner is requested to allow claims 1-8, 10 and 21-35, the only claims pending and under examination in this application after entry of the above amendments.

Claims 32 to 35 have been added. Support for new Claims 32 to 35 can be found throughout the specification and Claims as originally filed. For instance, support may be found at page 5, fifth and sixth full paragraphs and FIG. 2. Accordingly, no new matter has been added. As no new matter has been added by way of this/these amendments(s), entry thereof by the Examiner is respectfully requested.

As an initial matter, the Examiner is thanked for allowing claims 21-30 and acknowledging that Claims 4 and 10 contain allowable subject matter.

Claim Rejections – 35 U.S.C. § 102

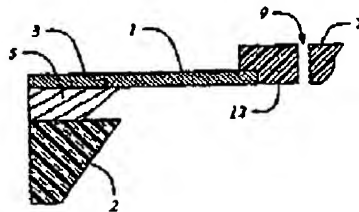
Claims 1-3, 5 and 31 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Knoll (USPN 5,393,401).

According to the M.P.E.P., a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim. See MPEP § 2131.

Claims 1 and 31 are directed to a structure for the construction of a microscale or nanoscale device. The components of the structure are illustrated with reference to FIG. 2 below. The structure includes a rigid frame (2) supporting a diaphragm (1) made of a first material, wherein the diaphragm (1) has an opening therethrough. The

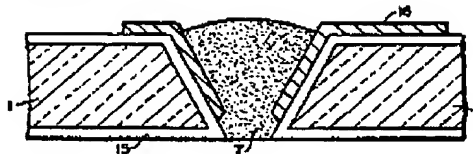
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structure additionally includes a region (12) of a second material (7) disposed in the opening which is supported by the diaphragm. Claim 1 additionally recites that the diaphragm is in tension and Claim 31 recites that the region of the second material includes a single nanopore. The first material and the second material are different.



The device disclosed in Knoll is set forth herein below:

FIG.4



Knoll defines element 1 as a silicon wafer, element 15 as a silicon dioxide coating and element 7 as a membrane. The Office equates the wafer 1 with the rigid structure 2 (as claimed by the Applicants), the silicon dioxide coating (15) with the diaphragm 1 (as claimed by the Applicants) and the membrane (7) with the second material 7 (as claimed by the Applicants). Additionally, the Office asserts that the top and bottom corners of the opening will *necessarily* be in tension. Accordingly, The Office asserts that the Applicants' claims are anticipated by the disclosure of Knoll.

The Applicants respectfully disagree and contend that the Office is mischaracterizing the cited art. The Applicants contend that element 15 is not a diaphragm, it does not include an opening and it is not in tension.

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According to M.P.E.P. § 2111.01 the words of a claim must be given their "plain meaning" unless they are defined in the specification.

According to the Cambridge online dictionary the plain meaning of a diaphragm is:

diaphragm (COVER): noun [C] SPECIALIZED
"any thin piece of material stretched across an opening"

Hence, as can be seen with reference to the above definition, a diaphragm is a thin piece of material that is stretched across an opening. As can be seen with reference to element 1 of the Applicants' FIG. 2 above, this definition is in accordance with the way that term is used by the Applicants. The diaphragm (element 1) stretches across an opening formed in the rigid structural material 2.

However, this is not how element 15 is defined with reference to FIG. 4 of Knoll. According to the disclosure of Knoll, element 15 is a silicon dioxide coating that is applied to the wafer 1 after an opening has already been etched into the wafer 1. See for instance, column 6, lines 12 to 15, below:

All or part of the silicon surface can be coated, after the containment has been etched, by known thermal-oxidation, chemical-vapor deposition, or spin-on-glass methods with a layer 15 of silicon dioxide. The layer

Hence, the silicon coating 15 does not stretch across an opening, rather it merely coats the surface of the wafer 1. Therefore, by definition coating 15 is not a diaphragm.

Further, because element 15 is a coating that is applied to the wafer 1 after the containment orifice has been etched into the wafer, the coating (which the Office equates with the Applicants' diaphragm) does not have an opening therethrough, as

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recited in the rejected claims. Rather, element 15 simply coats a surface of wafer 1 wherein it is the surface of wafer 1 that has the opening and not the coating 15.

Furthermore, with respect to Claim 1, because element 15 is simply a coating that covers wafer 1, there is no reason to believe that it is in tension.

Additionally, with respect to Claim 31 Knoll does not teach that membrane 7 (which the Office equates with the Applicants' second material) includes a single nanopore. Rather, the membrane 7, is made by a sol-to-gel process and therefore is porous in nature, thereby having multiple pores.

Therefore, in view of the above, Knoll does not anticipate the rejected claims because Knoll is deficient in that it fails to teach every element of the claimed invention, namely, a diaphragm that includes an opening and is in tension or includes a single nanopore. Accordingly, the Applicants respectfully request that the 35 U.S.C. § 102(b) rejection of Claims 1-3, 5 and 31 be withdrawn.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 6-8 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Knoll (USPN 5,393,401).

Claims 6 and 8 depend ultimately from Claim 1. As explained above, Knoll is deficient in that it fails to teach every element of the rejected claims, namely, a diaphragm that includes an opening and is in tension or includes a single nanopore. Accordingly, because Knoll is deficient in these regards a *prima facie* case of obviousness has not been established. Therefore, in view of the above, the Applicants contend that a *prima facie* case of obviousness has not been established and respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 6-8 be withdrawn.

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New Claims

With respect to new Claims 32 to 35, new Claims 32 and 33 depend from Claim 1. New Claims 34 and 35 depend from Claim 31. Accordingly, for the reasons stated herein above, New Claims 32 to 35 are patentable over the prior art.

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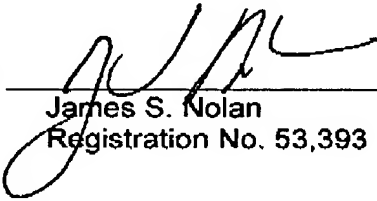
CONCLUSION

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone Timothy Joyce at (408) 553-2510.


The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10021235-1.

Respectfully submitted,

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